Increasing SAT Participation Rate in Wisconsin

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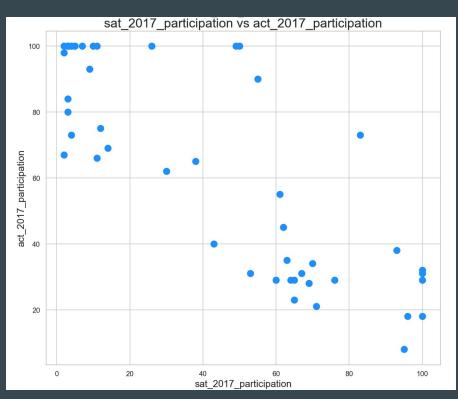
Context and Problem Statement

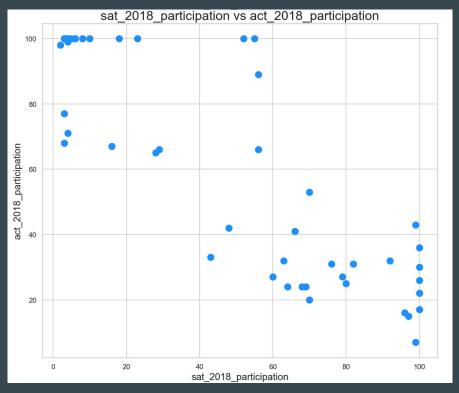
- The ACT and SAT tests are measures of college readiness and students admission into college.
- In the recent years, the ACT participation percentage of 100% > SAT participation.
- College Board as a non-profit organisation:
 - Connect students to college success
 - Expand access to higher education
- Aims to increase participation for the SATs.
 - One of the lowest participation for SAT: **Wisconsin**
 - Lowest participation in both SAT and ACT: Oregon

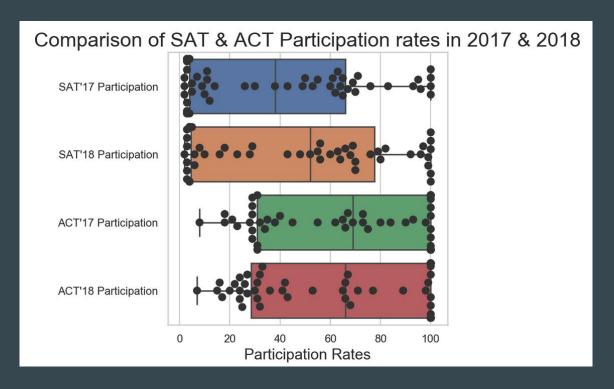
Summary of Analysis

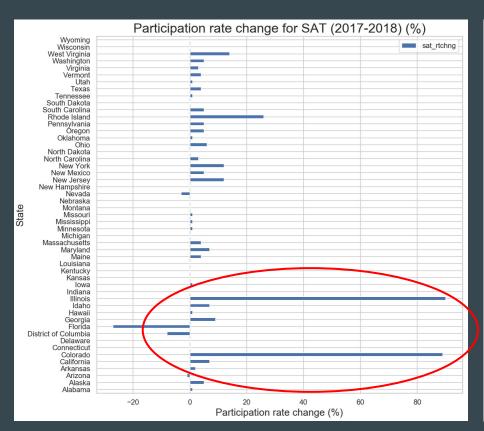
- <u>Distribution of variables</u>: A visual assessment of histograms of each variable showed that they are multimodal distributions. Running the Shapiro-Wilk test on each variable also showed that except for ACT 2017 reading scores, ACT 2017 science scores, and ACT 2018 science scores, which have p values above 0.05, all other variables do not have normal distributions → unable to draw valid conclusions.
 - E.g. multiple clusters of states along spectrum of participation rate
- <u>ACT vs. SAT</u>: participation rates for SAT and ACT are negatively correlated, implying that students who take one test typically do not take the other.
 - e.g . Colorado: jump from 11% to 100% after SAT was mandated and corresponding fall in ACT rates.

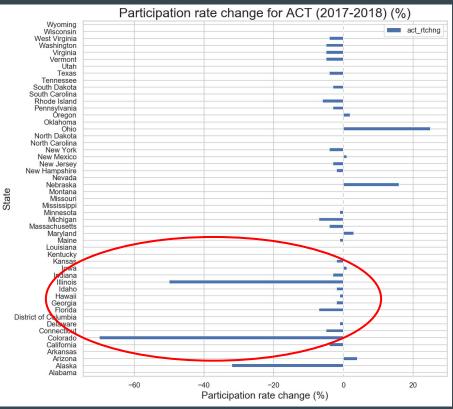
Correlation coefficients for all pairwise comparisons of numerical variables																							
act_2017_english	-0.84	1	0.97	0.99	0.98	0.99	0.69	-0.46	-0.42	-0.44	-0.8	0.93	0.94	0.92	0.93	0.92	0.68	-0.35	-0.37	-0.36			
act_2017_math	-0.86	0.97	1	0.98	0.99	0.99	0.71	-0.49	-0.42	-0.45	-0.81	0.93	0.91	0.95	0.92	0.93	0.7	-0.36	-0.34	-0.35		- 0).8
act_2017_reading	-0.87	0.99	0.98	1	0.99	1	0.71	-0.49	-0.44	-0.47	-0.81	0.93	0.92	0.92	0.94	0.93	0.68	-0.36	-0.37	-0.37			
act_2017_science	-0.84	0.98	0.99	0.99	1	1	0.65	-0.42	-0.37	-0.39	-0.78	0.93	0.92	0.94	0.93	0.94	0.65	-0.32	-0.32	-0.32			
act_2017_composite	-0.86	0.99	0.99	1	1	1	0.69	-0.47	-0.42	-0.45	-0.81	0.94	0.93	0.94	0.94	0.94	0.68	-0.35	-0.35	-0.36			
sat_2017_participation	-0.84	0.69	0.71	0.71	0.65	0.69	1	-0.87	-0.86	-0.87	-0.79	0.64	0.65	0.65	0.65	0.61	0.87	-0.67	-0.69	-0.68		- 0	0.4
sat_2017_erw	0.72	-0.46	-0.49	-0.49	-0.42	-0.47	-0.87	1	0.99	1	0.7	-0.44	-0.45	-0.45	-0.46	-0.41	-0.82	0.81	0.87	0.85			
sat_2017_math	0.68	-0.42	-0.42	-0.44	-0.37	-0.42	-0.86	0.99	1	1	0.67	-0.39	-0.4	-0.38	-0.41	-0.36	-0.79	0.8	0.88	0.85			
sat_2017_total	0.7	-0.44	-0.45	-0.47	-0.39	-0.45	-0.87	1	1	1	0.69	-0.42	-0.43	-0.42	-0.44	-0.38	-0.81	0.81	0.88	0.85			
act_2018_participation	0.92	-0.8	-0.81	-0.81	-0.78	-0.81	-0.79	0.7	0.67	0.69	1	-0.86	-0.85	-0.86	-0.87	-0.84	-0.87	0.6	0.64	0.62		- 0	0.0
act_2018_composite	-0.78	0.93	0.93	0.93	0.93	0.94	0.64	-0.44	-0.39	-0.42	-0.86	1	0.99	0.99	0.99	0.99	0.76	-0.4	-0.4	-0.41			
act_2018_english	-0.76	0.94	0.91	0.92	0.92	0.93	0.65	-0.45	-0.4	-0.43	-0.85	0.99	1	0.97	0.98	0.98	0.77	-0.42	-0.43	-0.43			
act_2018_math	-0.78	0.92	0.95	0.92	0.94	0.94	0.65	-0.45	-0.38	-0.42	-0.86	0.99	0.97	1	0.98	0.99	0.76	-0.4	-0.38	-0.4			
act_2018_reading	-0.79	0.93	0.92	0.94	0.93	0.94	0.65	-0.46	-0.41	-0.44	-0.87	0.99	0.98	0.98	1	0.99	0.76	-0.42	-0.43	-0.43			-0.4
act_2018_science	-0.76	0.92	0.93	0.93	0.94	0.94	0.61	-0.41	-0.36	-0.38	-0.84	0.99	0.98	0.99	0.99	1	0.73	-0.38	-0.38	-0.38			
sat_2018_participation	-0.76	0.68	0.7	0.68	0.65	0.68	0.87	-0.82	-0.79	-0.81	-0.87	0.76	0.77	0.76	0.76	0.73	1	-0.76	-0.79	-0.79			
sat_2018_erw		-0.35	-0.36	-0.36	-0.32	-0.35	-0.67	0.81	8.0	0.81	0.6	-0.4	-0.42	-0.4	-0.42	-0.38	-0.76	1	0.95	0.99			
sat_2018_math		-0.37	-0.34	-0.37	-0.32	-0.35	-0.69	0.87	0.88	0.88	0.64	-0.4	-0.43	-0.38	-0.43	-0.38	-0.79	0.95	1	0.99		-	-0.8
sat_2018_total	0.55 .6	0.36	0.35	0.37	0.32 g	1g. 0.36	0.68 .5	0.85	0.85	0.85	0.62	0.41	0.43	0.4 £	0.43	0.38	0.70	0.99	0.99	1 lej			
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	17_pa	act_2017_english	act_2017_math	act_2017_reading	act_2017_science	act_2017_composite	17, pa	Sat	sat_2017_math	Sal	18_Pa	act_2018_composite	act_2018_english	act_2018_math	act_2018_reading	act_2018_science	118_pa	Sat	sat_2018_math	Sal			
	act_2017_participation	ĕ		eg.	ac	act	sat_2017_participation				act_2018_participation	act ,	ĕ		e e	ac	Sat_2018_participation						











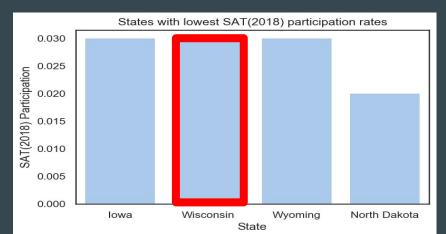
- Significant spike in SAT participation rate 2017-2018
 - Illinois, Colorado, Rhode Island
 - Illinois State Board of Education has ended its contract with ACT as the College Board earlier won a three-year, \$14.3 million bid to give its exam to all public high school juniors in Illinois in 2016
 - In Colorado, the state Department of Education announced in 2015 that a selection committee chose The College Board, makers of the SAT, over the ACT testing company, through a competitive bidding process
 - In 2018, the SATs and PSATs became a graduation requirement, part of the Rhode Island's college admission test

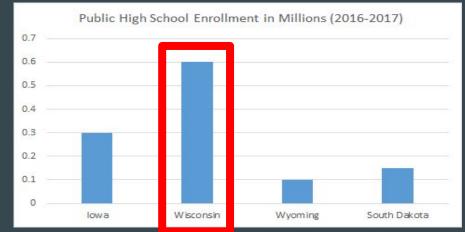
Recommendation - State

<u>Target Wisconsin</u> to achieve significant increase in SAT participation rate

- 1. Wisconsin mandates student from public schools to take ACT potential to achieve 100%
- 2. Wisconsin had the third lowest participation rate (0.03) in 2018
- 3. Wisconsin's public high school student population was larger than Iowa, North Dakota and Wyoming (source: https://educationdata.org/number-of-public-schools/)

Other possible targets include Oregon which had the lowest combined SAT and ACT participation rates in 2018





Recommendation - Strategy

<u>Win contracts</u> with the Wisconsin Department of Education to make <u>SAT</u> mandatory

- Wisconsin state is likely to prioritise cost reduction over the next few years as the US government has only approved a state budget which was half the amount of what was requested by Wisconsin in 2019 (source: https://www.wuwm.com/post/budget-compromise-gives-wisconsin-schools-half-funding-boost-evers-wanted#stream/0)
- The College Board can undercut ACT when Wisconsin's contract with ACT ends and reinvent the success achieved in Colorado and Illinois
- Assumptions: Wisconsin's contract duration with ACT will end in 2020 and Wisconsin will continue to mandate SAT/ACT

Other considerations include offering free SAT to students

